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ON SOME UNDESCRIBED SPECIES OF CAMPTOCERAS AND OTHER LAND  
SHELLS, *by* HENRY F. BLANFORD.  
(With plate II.)

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Of the species, now described, the two new forms of *Camptoceras* were obtained recently by Major Godwin-Austen in Eastern Bengal. The *Alycaeus*, and I believe the *Diplommatina*, were originally found by myself many years since at Darjeeling. The *Glessulæ* and *Helicarions* from the same place were obtained by Mr. Atkinson and Dr. Stoliczka.

The discovery of two new forms of a genus, hitherto known only as represented by the type species *C. terebra*, Bens., is of great interest; the more so that one of the new forms exhibits in only a slight degree the abnormal character of the typical species, while the other has this character as strongly marked as *C. terebra*; to which indeed it is closely allied. The conditions of habitat under which Major Godwin-Austen found his specimens are somewhat different from those of *C. terebra*, described by Mr. Benson. Major Austen is not, however, sure that the specimens were living at the time that he met with them, and it is quite compatible with the circumstances, that *C. Austeni* and *C. lineatum* should, like *C. terebra*, naturally live beneath the water.

I may note that *C. terebra* (see pl. II, fig. 1,) has never been met with by any collector, either at Moradabad or elsewhere, since its original discovery by Dr. Bacon and Mr. Benson.

**Camptoceras Austeni**, nov. sp. Pl. II, fig. 2.

Testa sinistrorsa, elongata, albido cornea, epidermide tenui induta, striis spiralibus et transversis minutissime obliquiter decussata. Spira elongato acuminata. Apex acutiusculus. Anfractus 2, soluti. Apertura subobliqua, regulariter ovalis, supernè haud complanata. Peristoma integrum, continuum, fusco-marginatum.

Alt. 3.75, diam. 1 mm.—Aperturæ alt. 1.6, diam. 0.9 mm.

Cepit Major H. H. Godwin-Austen herbæ adhærentem, margine desiccato laevis, *beel* dicti, apud Nazirpûr haud procul a Shushong, provinciæ Mymensing, patriæ Bengalîæ.

In form this species closely resembles *C. terebra*, Bens., but is distinguished by its much smaller size, the smaller number of its whorls, and especially the regular oval form of its aperture; that of *C. terebra* being much flattened on the inner upper margin. Other differences are presented by the specimen of the latter species here figured, (fig. 1) and which I received some years since from the late Mr. Benson. The aperture of *C. terebra* is equal to more than half the length of the shell, while that of *C. Austeni* is less than half the same length; the proportions in the former case, as determined by accurate measurement, being 53 per cent., in the latter 42 per cent. My specimen of *C. terebra* is probably not full grown, since it has but  $2\frac{1}{2}$  whorls, and the margin of the peristome is sharp, unlike that of the specimens both of *C. Austeni* and the following species. All the specimens of these exhibit a thickening of the epidermis around the peristome, which I consider characteristic of the full grown shell. *C. Austeni* would appear to be rare at the locality, since only five specimens were found among a large number of the following species. It is possible, however, that it may have been overlooked, owing to its smallness.

**Camptoceras ? lineatum**, nov. sp. Pl. II, fig. 3.

Testa elongate ovata, sinistrorsa, albido cornea; epidermide tenui induta; lineis elevatis, fuscis, æquidistantibus, spiralibus ornata; interspatiis minute decussatis. Spira valde exserta. Apex acutiusculus. Anfractus  $2\frac{1}{2}$ , approximati, attingentes; ultimus pone aperturam omnino solutus. Apertura subobliqua, ovalis, superne

subcomplanata. Peristoma continuum, integrum, fusco-marginatum.

Alt. 4.5 mm. ; diam. 2.3 mm.—Aperturæ alt. 3.5, lat. 1.7 mm.

Habitat cum præcedente.

It is not with entire confidence that (not having seen the animal) I attribute this species to the genus *Camptoceras*, since it differs from the typical species in having the whorls contiguous, except behind the peristome. In most specimens that I have examined, little more than the peristome is free, but in one or two, at least a quarter of the last whorl is not in contact with the penultimate whorl, as may be seen if the shell be held up to the light, or over a sheet of white paper in a proper position. The character of the peristome and of the shell surface closely resemble those of the more typical species of *Camptoceras*, and that the habits of the animal are similar, may be inferred from its association with the preceding species. As far as can be judged, therefore, the evidence is preponderant in favour of this generic alliance I have adopted. Perhaps it may not be irrelevant to add that no species of *Physa* has yet been discovered in India.

***Alycæus digitatus*, nov. sp. Pl. II. fig. 4.**

Testa solida, depresso turbinata, umbilicata, albido-cornea, regulariter costulata ; pone aperturam usque ad tubulum striata. Spira parum exserta, apice obtusulo. Anfractus 4, rotundati ; ultimus inflatus, deinde constrictus, iterum abrupte expansus, denique abrupte constrictus, antice depressus et in 5 plicationes validas desinens. Tubulus post constrictionem oriens, recurvatus,  $\frac{2}{3}$  anfractus subæquans. Sutura impressa. Apertura perobliqua. Peristoma duplex ; externum simplex, evertatum ; internum continuum, superne valde prolongatum, 5-plicatum. Plica basalis abrupte recurvata. Operculum corneum, extus concavum.

Alt. 3.6 mm. ; diam. major 5.5 ; minor 4 mm.

Aperturæ alt. 2.25, lat. 2.75 mm.

Habitat apud Darjeeling in vallo Rungno fluminis Himalayæ Sikkimensis.

Of all the *Alycæi* yet described with plicate peristomes, this exhibits the character in the most exaggerated degree ; the free

portion of the lip being prolonged into five digitiform folds, nearly a millimetre in length. The ridge-shaped fold between the two constricted portions is very abrupt, as in *Alycaeus plectocheilus*, which species, together with an yet unpublished form found by Major Godwin-Austen in the Khasi Hills, are its nearest allies. In some specimens, taken alive, the costulation has disappeared from the greater portion of the upper whorls, and remains only in patches; so that on a cursory inspection, the whorls appear to be smooth and striate; it is most distinct on the inflated portion of the shell.

I found a single specimen of this shell in 1856, in the Rungno valley. Some years afterwards I received several specimens from Mr. W. S. Atkinson, which were taken, I believe, near the station of Darjeeling.

**Diplommatina ungulata, nov. sp. Pl. II. fig. 5.**

Testa dextrorsa, ovato-conica, subrimata, tenuis, costulata, cereo-albida. Spira superne conica; sutura impressa; apex obtusulus. Anfractus 7; duo primi lævigati, ceteri confertim costulati; antepenultimus major, tumidus; penultimus supra aperturam constrictus; ultimus valde ascendens, ad basin rotundatus. Apertura subobliqua, subquadrata; plica columellaris mediocris. Peristoma subduplicatum, margine dextro evertato, juxta suturam sinuatum, in expansionem angustam unguiformem, antice productum; subtus rectum. Callus columellaris late appressus.

Alt. 3 mm.; diam. vix 2 mm.—Aperturæ alt. 1 mm., lat. 1 mm.

Habitat apud Darjeeling.

The only species yet described that presents anything resembling the peculiar conformation of the lip exhibited by this species is the rare *D. scalaria*, W. Blanford, from the Khasi Hills, and it is scarcely discernible in some specimens even of this species, which moreover presents no other point of marked resemblance. In all the specimens I have seen of *D. ungulata*, it is strongly marked; in some, however, more so than in others.

I have had five or six specimens for some years in my collection labelled as from Darjeeling, but I am uncertain whether I found them myself, or received them from Mr. Atkinson. Dr. Stoliczka recently found several specimens, about 600 feet below the station

of Darjeeling, among dead leaves on moist ground. The animal is white, with the tentacles dusky and the upper part of the rostrum reddish coloured.

**Glessula erosa**, nov. sp. Pl. II. fig. 7.

Testa elongato-turrita, crassula, parum nitens, haud diaphana, longitudinaliter oblique striata, epidermide fusco-straminea induta. Spira turrita, lateribus convexiusculis; apice truncato. Anfractus apicales carentes; superstites 7 sub-planati; superiores plerumque plus minusve decorticati et erosi; sutura impressa. Apertura obliqua, postice angulata, intus lactea. Peristoma simplex, acutum. Columella leniter arcuata, ad basin oblique truncata.

|                |    |      |        |
|----------------|----|------|--------|
| Alt.,          | 35 | 36   | 34 mm. |
| Diam.,         | 10 | 10.5 | 9 mm.  |
| Aperturæ alt., | 10 | 10   | 9 mm.  |
| „ lat.,        | 5  | 5    | 5 mm.  |

Habitat apud Darjeeling.

This species is easily distinguished from its local associate *G. tenuispira*, Bens., by its thickness and opacity, and by the character of the surface, which has none of the vitreous lustre so characteristic of most species of the genus. The upper whorls are generally much eroded; the lower, which retain the epidermis, are of a dark straw colour with darker oblique bands at intervals, apparently marking stages of growth. Under a lens very fine dark spiral lines are also perceptible.

I received several specimens of this shell in 1863 from Mr. W. S. Atkinson, but it has not hitherto been described. It appears to be a rare species. Dr. Stoliczka only got two specimens in forest at the waterfall about 1000 feet below Darjeeling.

**Glessula baculina**, nov. sp. Pl. II. fig. 6.

Testa elongato-turrita, gracilis, tenuiscula, oblique striata, fusco vel fulvo cornea, epidermide nitescente induta. Spira turrita, apice obtusulo. Anfractus  $13\frac{1}{2}$ , parum convexi; inferiores sub-æquales; sutura impressa, minute denticulata. Apertura obliqua, ovato-triangularis; peristoma simplex, acutum. Columella abrupte arcuata, oblique producta, ad basin verticaliter truncata.

Alt. 38 mm. ; diam. 6.5-7.5 mm.—Aperturæ alt. 7, lat. 4 mm.

Cepit Dr. F. Stoliczka apud Khersiong Himalayæ Sikkimensis.

This species appears to have escaped the notice of all previous collectors in Sikkim ; it was found in association with its near ally *G. tenuispira*, Bens., by Dr. Stoliczka during a recent visit. It is easily distinguished from the latter species by its slenderness, (the diameter being  $\frac{1}{3}$  of the length), and the comparative narrowness of its whorls ; moreover by the form of the columella, the lower part of which is bent abruptly almost at right angles with the slope of the inner lip ; while in *G. tenuispira*, *G. erosa*, and other allied forms, the curvature is at the utmost obtuse. Specimens, the shell of which has been slightly weathered, shew fine spiral markings, but these are not visible unless the shell has become somewhat opaque. The animal is dark leaden grey, somewhat paler at the sides of the foot.

The following is a list of the species now known from Sikkim :—

*G. tenuispira*, Bens., *G. crassula*, Bens., *G. hastula*, Bens., *G. orobia*, Bens., *G. erosa*, nob., *G. baculina*, nob.

*Helicarion ovatum*, nov. sp. Pl. II. fig. 9.

Testa depressa, peripheriâ ovatâ, solidiuscula, diaphana, fusciscente cornea, polita, obsolete arcuatim striata. Spira parum convexa ; apice vix exserto. Anfractus  $3\frac{1}{2}$ , rapide accrescentes ; ultimus descendens. Sutura impressa, marginata. Apertura obliqua, depressa lunata. Peristomatis margo columellaris subverticalis ; basalis leniter arcuatus.

Diam. major 11.5 mm., minor 9 mm., axis 5 mm.

Aperturæ alt. 5, lat. 7 mm.

Cepit Dr. F. Stoliczka apud Darjeeling.

Distinguished from *H. salius*, Bens. sp. (with which it is associated,) by its larger size, more depressed form and simple peristome, not recurved at the columella. On the other hand, it is smaller, more solid and more globular than *H. planospira*, Bens. sp. From *H. scutella*, Bens. sp., and *H. Bensoni*, Pfr. sp., it differs by its greater solidity, its highly polished surface and the less rapid increase of the last whorl. It is also smaller than the former of these species.

*Helicarion heteroconcha*, nov. sp. Pl. II. fig. 8.

Testa valde depressa, peripheriâ ovali, tenuis, diaphana, subtus membranacea, luteo cornea, versus aperturam viridicans, polita, arcuatim obsolete striata, versus aperturam irregulariter subcostulata. Spira planata, apice vix exserto. Anfractus 3, rapide accrescentes; ultimus dilatatus vix descendens. Sutura subimpressa, albido marginata. Apertura perobliqua, oblongo-ovata. Peristomatis margo anterior antice valde arcuatus; margo dexter subundulatus; margo basalis membranaceus.

Diam. major 17, minor 11 mm., axis 5 mm.

Aperturæ alt. 8, lat. 11 mm.

Habitat apud Darjeeling.

This very pretty shell is very distinct from any species hitherto described from Northern India. It is probably allied to some of the Ceylon species which like it have a membranaceous base. I have had the specimens for some years in my collection. They were, I believe, obtained by Mr. W. S. Atkinson.



ON SOME NEW OR IMPERFECTLY KNOWN INDIAN PLANTS, (continuation from Journal, Vol. XXXIX, part 2, pp. 61—91),—by S. KURZ, Esq.

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*DILLENIA CÆ.*1. *DILLENIA PARVIFLORA*, Griff., (Not. Dicot., 704.)

Arbor vasta; folia oblongo-lanceolata, acuta v. breviter acuminata, longe et graciliter petiolata, repando-dentata, supra scaberrima, subtus dense tomentosa; flores mediocres, pedunculis longis tomentosis, vulgo ebracteatis, 2-4—nis, e ramulis verruciformibus orientibus sustenti; sepala dense pubescentia; staminum series interior exteriore duplo longior; styli carpellaque 5—7.—Pegu, Yomah (Dr. Brandis).

This is a very distinct species, very much resembling in foliage *D. scabrella*, Roxb., but the flowers are quite different.



1. *Camptoceras terebra*, Bens.

2. " *Austeni*, H. Blf.

3. " *lineatum* "

4. *Alycaeus digitatus*, "

5. *Diplommatina unguolata*, H. Blf.

6. *Glossula baculina* "

7. " *erosa* "

8. *Helicarion heteroconcha* "

9. *Helicarion ovatum*, H. Blf.